



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/021,558 | 12/12/2001 | Martin Baumann | FER-12790 | 9291 |

7609 7590 03/13/2003

RANKIN, HILL, PORTER & CLARK, LLP
700 HUNTINGTON BUILDING
925 EUCLID AVENUE, SUITE 700
CLEVELAND, OH 44115-1405

EXAMINER

PAULRAJ, CHRISTOPHER

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1773

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-2

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/021,558 | BAUMANN ET AL. | |
| | Examiner | Art Unit | |
| | Christopher G. Paulraj | 1773 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4,6</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Specification

1. The specification and claims are incomprehensible, as they appear to be a literal translation of the foreign priority document. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.
2. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification and claims are replete with grammatical/spelling errors and terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification include the second paragraph of page 3, which reads as follows:

"The invention accordingly provides a substrate, in particular a substrate of glass, ceramic, plastic and metal or a glazed or enameled substrate, with at least one self-cleaning surface, comprising a coating which is arranged on the substrate, comprises particles which form a surface structure and is at least superficially hydrophobic, which is characterized in that the structure-forming particles have an average diameter of less than 100 nm."

The sentence is a run-on. It is unclear whether the structure-forming particles are located within the substrate or the coating. The specification also contains numerous idiosyncrasies, such as the term "[sic]" on page 6, line 23 and the term "(=precursors)" on page 7, line 13 and page 8, line 10. These must be appropriately corrected.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants are reminded that when amending the claims, no new matter should be introduced to overcome the claim indefiniteness.

5. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present applications, the claims 1, 4, 7, 8, 11, 13, 14, 16, and 17 each recite a broad recitation, followed by a narrower limitation (as indicated by the terms "in particular" and "preferably"). The scope of the claims are therefore rendered indefinite.

Art Unit: 1773

6. It is unclear from the claims or specification as to what qualifies as being a "self-cleaning" surface. The term does not appear to have an art-recognized meaning. It is not clear how the surface can clean itself.

7. Claim 1 recites "the substrate comprising a coating of glass, ceramic, plastic and metal, or a glazed or enameled substrate." It is unclear from the claim language whether the coating is made of "glass, ceramic, plastic [or] metal" or if, as indicated in the specification, the substrate is made of "glass, ceramic, plastic [or] metal."

8. Claims 1, 14, and 17 use improper Markush group terminology when reciting materials. Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. One acceptable form of alternative expression, which is commonly referred to as a Markush group, is recited as "wherein R is a material selected from the group consisting of A, B, C and D." See Ex parte Markush, 1925 C.D. 126 (Comm'r Pat. 1925). It is improper to use the term "comprising" instead of "consisting of." Ex parte Dotter, 12 USPQ 382 (Bd. App. 1931). Another acceptable form is recited as "wherein R is A, B, C or D." See MPEP 2173.05(h). For example, it is unclear whether the elements recited with the conjunction "or" (e.g., "lead oxides or borates" in claim 14) are intended as part of the recited series.

9. The term "hydrophobic" in claim 1 is a relative term which renders the claims indefinite. The specification does not provide a standard for ascertaining the requisite degree of hydrophobicity, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Absent a quantitative indication such as a

Art Unit: 1773

contact angle measurement, one skilled in the art would not be able to reasonably determine what qualifies as being "at least partly superficially hydrophobic."

10. The term "glazed or enameled" substrate, recited in claims 1 and 9, suggest that a coating layer is formed onto the surface of the substrate. It is unclear from the claim language whether this coating (the enamel or glaze) is *in addition* to the recited coating comprising the particles.

11. It is unclear from the specification or the language of claim 5 what qualifies as being "bonded in or by means of an inorganic or organic layer-forming material." Specifically, it is unclear from the claim language whether the particles are to be bonded *to each other*.

12. The structure recited in claim 7 is unclear. It is unclear what is being referred to as the "layer according to the invention." Is this the same as the coating comprising the particles? The recitation of the "layer applied underneath" is also unclear. It is unclear what the layer is "underneath" of. Specifically, is this layer underneath the substrate or underneath the "layer according to the invention"? It is also ambiguous as to what can be considered as the "micro-scale surface structure" or the "over-structure" referred to in the claim.

13. It is unclear what the weight ratio recited in claims 8 and 11 refers to. Is it the ratio of (particles):(layer-forming material) or the ratio of (layer-forming material):(particles)?

14. It is unclear from the language of claim 12 as to what constitutes being the "main components" of the layer forming material. Specifically, it is unclear whether the

Art Unit: 1773

language requires a particular minimum for the "glass frits or/and one or more glass raw materials." It is also unclear which component the phrase "which are capable of glass formation" refers to. Is this phrase referring to the "structure-forming particles" or "the glass frits or/and one or more glass raw materials"?

15. The phrase "substantially comprises" used in claims 13 and 15 is indefinite. The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. However, the scope of the instant claims is rendered indefinite because it is unclear whether the term "substantially" is intended to place a limit on the open-ended nature of the term "comprises" or if it requires a particular minimum amount of the components explicitly recited.

16. It is unclear whether the "particulate material" recited in claim 13 is intended to be a part of the "structure-forming particles," the "layer-forming material," or if it is intended to be a separate component than either of those. It is also unclear whether the "liquid medium" is a required part of the claimed composition.

17. It is unclear from the language of claim 15 what the required components are. Specifically, it is unclear whether the terms "alkali metal or ammonium dihydrogen phosphate or di-alkali metal or diammonium hydrogen phosphate or a glass frit which melts below 600°C " are required to be a part of the composition. The use of the conjunction "or" in the claims suggests that these elements are optional. It is also unclear what constitutes a "printing medium" as recited in the claim. A "printing medium" is generally considered to be something to be printed on (i.e., paper).

Art Unit: 1773

However, this does not seem to apply in the present claim because the claim is directed to a composition.

18. It is unclear from specification or language of claim 17 as to what constitutes a "micro-rough surface." The term does not appear to have an art-recognized definition.

19. The term "paste-like consistency" in claim 18 is a relative term which renders the claim indefinite. The term "paste-like" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Absent a quantitative indication of viscosity, one skilled in the art would not be able to readily ascertain what qualifies as a "paste-like consistency."

20. Claim 19 provides for the use of a substrate, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. Claim 19 is also rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

21. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

22. Claims 1-5, 8-11, 16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Shouji et al. (U.S. Patent 6,068,911).

Shouji et al. discloses a super water-repellent coating that comprises an organic coating material comprised of an organic coating material (considered equivalent to the claimed layer-forming material) and filler particles of at least 5 nm in average particle diameter (considered equivalent to the claimed structure-forming particles) (see abstract). Examples of the particle include silica, alumina, and titania (see col. 4, lines 44-49). The fillers can be present in an amount of 10-150% by weight of the organic coating material (see col. 2, lines 46-50). The substrate can be the windshield of an automobile (see col. 1, line 23). The inclusion of a perfluoropolyoxyalkyl group compound or a perfluoropolyoxyalkylene group compound renders the surface hydrophobic (see col. 9, lines 28-36).

Information Disclosure Statement

23. Receipt of Information Disclosure Statement filed on August 7, 2002 and April 25, 2002 is acknowledged and has been made of record. Foreign language documents were only considered to the extent of what their English abstracts provided.

Art Unit: 1773

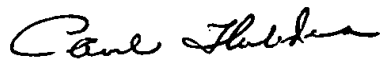
Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher G. Paulraj whose telephone number is (703) 308-1036. The examiner can normally be reached on Monday-Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0661.

cgp
March 8, 2003


Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700